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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/822,025 | 03/30/2001 | Takashi Yuzawa | Q63462 | 8373 |

7590 03/31/2004

SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

| EXAMINER | |
|---|---|
| PADGETT, MARIANNE L | |
| **ART UNIT** | **PAPER NUMBER** |
| 1762 | |

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

| Application No. | Applicant(s) |
|---|---|
| 09/822,025 | Yuzawa et al |
| **Examiner** | **Group Art Unit** |
| M.L. Padgett | 1762 |

*—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

☒ Responsive to communication(s) filed on 11/6/03.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

**Disposition of Claims**

☒ Claim(s) 1, 3 + 4 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 3 + 4 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

**Application Papers**

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119 (a)–(d)**

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)–(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

**Attachment(s)**

☐ Information Disclosure Statement(s), PTO–1449, Paper No(s). _____

☒ Notice of Reference(s) Cited, PTO–892

☐ Notice of Draftsperson's Patent Drawing Review, PTO–948

☐ Interview Summary, PTO–413

☐ Notice of Informal Patent Application, PTO–152

☐ Other _____

**Office Action Summary**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 6, 2003 has been entered.

2. The 112 rejections (sections numbered 2, 3 and 4 in the rejection of Paper No. 7 (mailed May 7, 2003, re-mailed June 6, 2003), have been corrected.

Applicants' remarks on page 5-6 labeled I. Preliminary Matters (remarks) of their November 6, 2003 response, concerning what "a working liquid containing no carbon component" may include, along with the cited page 8, lines 3-4, are taken as file wrapper estopple for the scope of this limitation, hence liquids with incidental inclusion of carbon from sources such as $CO_2$ or CO or $CO_4$ in the air, solvated into a working liquid will not be considered to remove those liquids from those that may be used in the claimed invention.

The terminal disclaimer has removed the obviousness double patenting rejection over USPN 6,314,778 B1, and correspondingly as per discussion on page 8 and 9 of the November 6, 2003 response, Moro et al is also disqualified as prior art, hence the 103 withdrawn.

The amendments to the claims, remove lead (Pb) from the list of solid lubricants, which was the one used in Nishimuro et al, hence removing the rejection based thereon. The amendments in claim 4 clarity its status as an apparatus claim and add limitations that require structural capabilities of electric discharge treatment of a substrate (work piece) in a fluid, thus differentiating from Kamata et al or JP 63-005956 A.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1 & 3-4 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 6, 9, 11 and 15 of U.S. Patent No. 6,602,561 B1 in view of Urashiro (JP 6-183,626) previously describe in section 9 of Paper No. 7, mailed May 7, 2003, re-mailed June 6, 2003.

The patented claims of Moro et al's 6,602,561 patents describe the compression molding process in much greater detail, but it is inclusive of the broader limitation of the present claims. The inclusion of "powder of a material having a self-lubricating function" and/or "powder of nitride" in the metal and/or metal compound mixture used in the electrode is again the generic of the specific solid lubricant material of the instant claims. For apparatus claim 4, the remaining difference is that the apparatus be capable of employing a working liquid. Whether or not that liquid contains carbon may be considered to be a method limitation, as it is not excluded from being a source of reactant, a non-reactant liquid might be considered part of the apparatus. However, Urashiro et al show that metallic pulsed discharge electrodes for deposition and removal of material are known to employ liquids, such as oil or water, as their working fluids, hence it would have been obvious for Moro et al to configure their apparatus such that the

electrode when discharging is in such liquids, where the desired resultant composition and/or reactions would determine which liquid was employed in the apparatus, because such discharge apparatus work by passing the discharge through some medium, with Urashiro et al showing the desirability of employing water (or oil) with electrodes consistent with those of Moro et al.

With respect to the method claims, the addition limitation of requiring the discharge to be in pulse form is claimed, however this too is a taught feature of Urashiro et al's process capability of their apparatus, hence would have been an obvious mode of operating the electrodes of Moro et al, due to pulsing's demonstrated effectiveness in use, and as pulsing is known to reduce energy consumption and heat production, thus can be economically beneficial or protective of relatively temperature sensitive materials associated with substrates being treated.

Note given lubricant material present in the consumable electrodes of Moro et al, the deposited material containing some of this lubricant would have inherently had some degree of lubricating effect.

5. Other art of interest include Inoue (JP4 06-106,420A- Au or In; or 4,193,852 – BN); Mandego et al (4,735,678 – Indium solder image on electrode); De Beurs et al (5,304,288 – Pt, Au or graphic conductive coating on electrode); or Sato et al (5,837,957 – BN) who all teach one of applicants' claimed materials on or in their discharge electrodes, which may be used in water, but do not form that component into the electrode using a compression molded powder, nor does the discharge surface treatment form a coating. The Japanese abstracts to Umagoe et al (JP4 05-287,335 A) and Fujiwara et al (JP4 05-285,737 A), both deposit gold via electric discharge making process, however use Au wires (therefore not compression molded) and do not specify

their machining fluid. Groos et al (JP4 04-261,749 A or 5,231,270) Adamski et al (5,637,239) and Inoue Japax Res (GB 2069396 A) all teach lubricant coated (Au) electrodes, but again lack the compression molding and teachings on type of machining fluid.

6. Any inquiry concerning this communication should be directed to Marianne L. Padgett whose telephone number (571) 272-1425 on Monday-Friday from about 8:30 a.m. to 4:30 p.m.; and fax phone number is (703) 872-9306.

M.L. Padgett/dh
March 11, 2004

March 25, 2004

MARIANNE PADGETT
PRIMARY EXAMINER